

CLAIMS

What is claimed is:

- 1 1. A tooth extraction device, comprising:
2 a handle;
3 a clamp assembly attached to said handle, said clamp assembly comprising a
4 structure for clamping a tooth to be extracted; and
5 a cable attached to the clamp assembly for moving the clamp assembly relative
6 to the handle to extract a tooth.

- 1 2. The tooth extraction device according to claim 1, wherein said structure for
2 clamping a tooth comprises a pair of clamp links that engage opposite sides of the
3 tooth.

- 1 3. The tooth extraction device according to claim 1, wherein said clamp
2 assembly is attached to the handle such that moments applied to the handle are
3 transferred to the tooth to be extracted.

- 1 4. The tooth extraction device according to claim 1, further comprising a
2 manually operated trigger connected to the cable, said trigger being operable to move
3 the cable relative to the handle.

- 1 5. The tooth extraction device according to claim 4, further comprising a
2 pinion connected to the trigger for rotation with the trigger, and a rack connected to
3 the cable, the rack and pinion being intermeshed such that rotation of the trigger

4 causes movement of the cable and the clamp assembly relative to the handle.

1 6. The tooth extraction device according to claim 1, wherein said clamp
2 assembly comprises a pair of clamp links pivotally connected to a carrier block, said
3 clamp links being rotatable to engage opposite sides of a tooth, and said carrier block
4 being movable relative to the handle to extract the tooth.

1 7. The tooth extraction device according to claim 6, wherein the carrier block
2 is slidable relative to the handle.

1 8. The tooth extraction device according to claim 7, wherein said clamp links
2 and said carrier block are arranged such that movement of the cable in a first direction
3 first causes said clamp links to rotate into engagement with opposite sides of a tooth
4 and then subsequently causes said carrier block to slide along the handle to extract the
5 tooth.

1 9. The tooth extraction device according to claim 8, wherein said clamp
2 assembly comprises a wedge attached to a free end of the cable, said wedge increasing
3 in thickness in a direction away from the cable, and said clamp links each having a
4 surface that engages a respective opposing side of said wedge, whereby movement of
5 said wedge relative to said clamp links causes said clamp links to rotate on said carrier
6 block.

1 10. The tooth extraction device according to claim 8, wherein said clamp
2 assembly comprises a pair of toggle links connected to a free end of the cable, said
3 toggle links each being connected to a respective one of said clamp links, whereby
4 movement of said toggle links relative to said carrier block causes said clamp links to
5 rotate on said carrier block.

1 11. The tooth extraction device according to claim 1, wherein said handle has
2 a handgrip portion at a first end, the clamp assembly attached to a second end, and an
3 elongated neck portion extending between the first and second ends, and wherein the
4 cable extends through the neck portion to an actuator located within the handle.

1 12. The tooth extraction device according to claim 1, further comprising at
2 least one support for engaging a neighboring tooth to provide a reaction force when
3 extracting a tooth.

1 13. The tooth extraction device according to claim 12, wherein said at least
2 one support comprises a base support for engaging a first neighboring tooth on a
3 proximal side of the clamp assembly, and a removable tooth support for engaging a
4 second neighboring tooth on a distal side of the clamp assembly.

1 14. A tooth extraction device, comprising:
2 a handle;
3 a clamp means attached to said handle for clamping a tooth to be extracted;
4 and
5 a drive means for sequentially pivoting said clamp means into engagement
6 with the tooth to be extracted and then sliding said clamp means relative to said
7 handle to extract the tooth.

1 15. The tooth extraction device according to claim 14, wherein said drive
2 means comprises a cable connected to said clamp means.

1 16. The tooth extraction device according to claim 15, wherein said drive
2 means further comprises a manually operated trigger connected to the cable, said
3 trigger being operable to move the cable relative to the handle.

1 17. The tooth extraction device according to claim 16, wherein said drive
2 means further comprises a pinion connected to the trigger for rotation with the trigger,
3 and a rack connected to the cable, the rack and pinion being intermeshed such that
4 rotation of the trigger causes movement of the cable and the clamp assembly relative
5 to the handle.

1 18. A tooth extraction device, comprising:
2 a handle;
3 a clamp assembly attached to said handle, said clamp assembly comprising a
4 pair of clamp links pivotally connected to a carrier block, said clamp links being
5 rotatable to engage opposite sides of a tooth, and said carrier block being slidably
6 movable relative to the handle to extract the tooth;
7 a cable attached to the clamp assembly for moving the clamp assembly relative
8 to the handle to extract a tooth;
9 an actuator for moving the cable within the handle; and
10 a support for engaging a neighboring tooth to provide a reaction force when
11 extracting a tooth.

1 19. The tooth extraction device according to claim 18, further comprising a
2 manually operated trigger connected to the cable, said trigger being operable to move
3 the cable relative to the handle.

1 20. The tooth extraction device according to claim 19, further comprising a
2 pinion connected to the trigger for rotation with the trigger, and a rack connected to
3 the cable, the rack and pinion being intermeshed such that rotation of the trigger
4 causes movement of the cable and the clamp assembly relative to the handle.

- 1 21. The tooth extraction device according to claim 18, wherein said clamp assembly
- 2 and said carrier block are arranged such that movement of the cable in a first direction
- 3 first causes said clamp links to rotate into engagement with opposite sides of a tooth
- 4 and then subsequently causes said carrier block to slide along the handle to extract the
- 5 tooth.